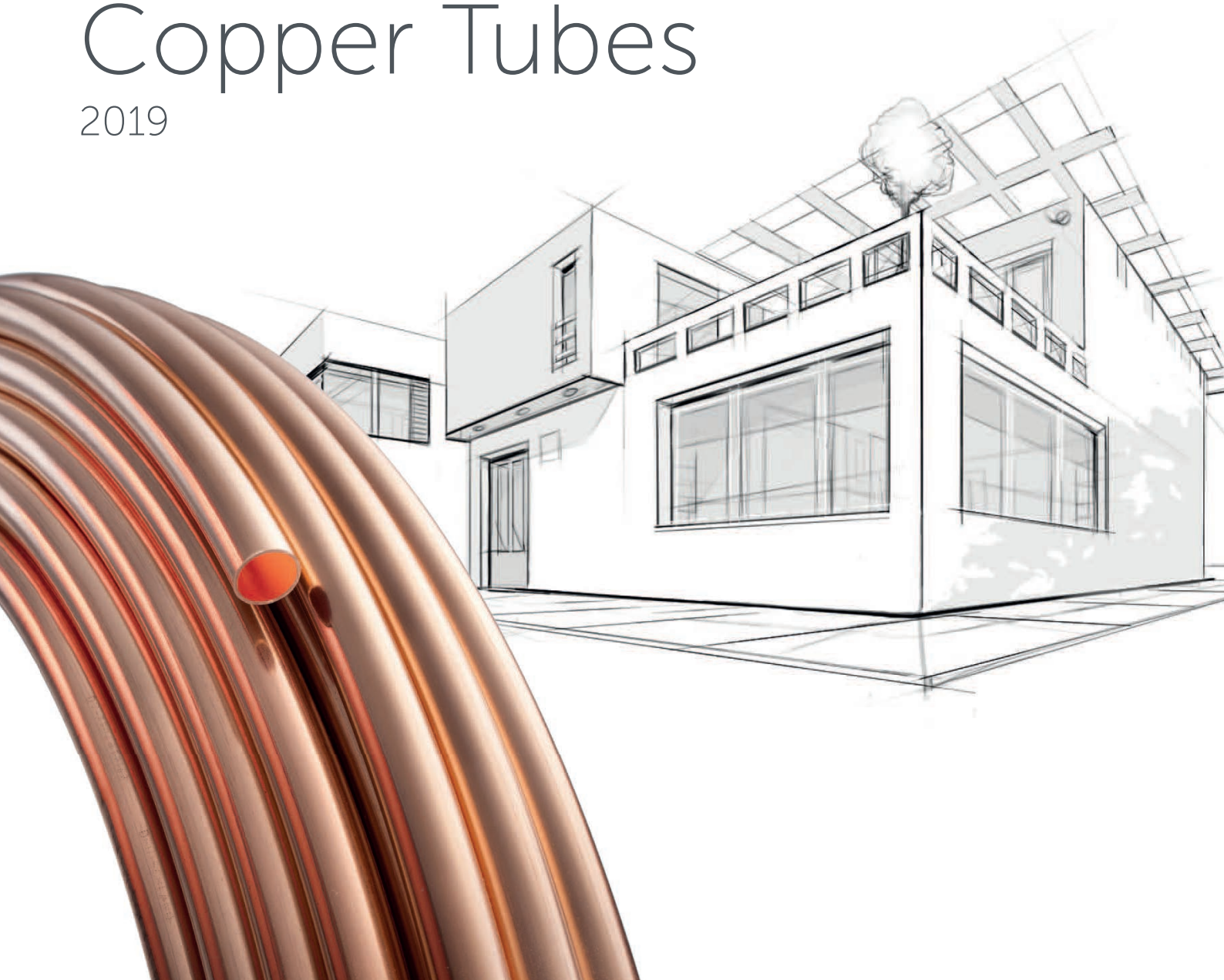
wieland

Plumbing, Heating, ACR and Medical Copper Tubes

2019



Copper

Copper is the shining reddish metal known by the Romans as aes cyprium (ore from Cyprus). However, copper has been known long before the Romans gave it this name. As a natural resource it is valuable in every form, be it as a vital trace element in the human body or a mineral found in the Earth's crust.

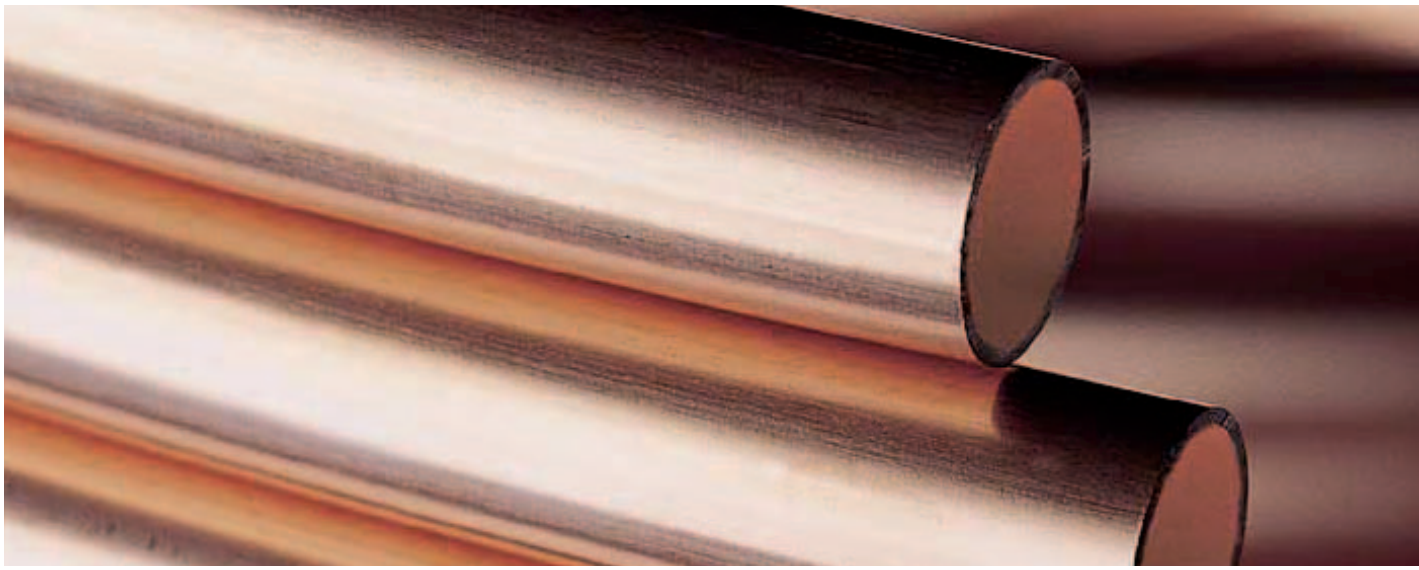
Over the centuries, man has discovered the many advantages of copper and its alloys, notably its excellent forming properties, strength, thermal and electrical conductivity. Copper has proved itself to be one of the most important worked metals in modern times.

Copper is a unique material for ecologically sustainable developments and is 100 percent recyclable. More than half of today's raw copper is already produced by reusing returned material.

Copper tubes

- are resistant to ageing and retain their properties
- e.g. pressure resistance and elasticity
- are gas- and diffusion-tight
- are subject to minimal thermal expansion
- exhibit good mechanical resistance
- are easy to install
- can be connected by a variety of techniques, which have
- proven over generations
- are not affected by temperature fluctuations
- are suitable for all domestic plumbing applications
- are readily available in all common sizes

The requirements to be satisfied by copper tubes for domestic plumbing systems are clearly specified in a single standard: EN 1057.



The Wieland Group

The Wieland Group, with headquarters in Ulm, is one of the world's leading manufacturers of semi-finished and special products in copper and copper alloys, such as strip, sheet, tubes, rods, wires and sections. Special products include slide bearings, finned tubes and heat exchangers.

As an international company, Wieland has manufacturing companies, slitting centres and trading companies in many European countries as well as in the USA, in South Africa, Singapore, China and India. The global workforce of the Wieland Group is approx. 6,700 strong of which 4,300 are employed in Germany. The domestic plants (Wieland-Werke AG) are located in Ulm, Velbert-Langenberg, Villingen-Schwenningen and Vöhringen/Iller.

Wieland supplies customers in numerous markets with over 100 different copper alloys which are primarily used in the electrical and electronic industry. Other important sectors are the construction, automotive as well as the air conditioning and refrigeration industries. Wieland materials are used in a variety of everyday products such as contacts in electrical sockets, drinking water and heating pipes, door locks, slide bearings for engines, refrigeration units for cold stores and air conditioning units. Our materials also prove to be indispensable for high-tech applications in computer and telecommunications technologies.

Vöhringen plant – production location for copper plumbing tubes

cuprofrio® plus

Pre-insulated refrigeration tube

This tube consists of a seamless drawn Wieland cuprofrio refrigeration tube with a heat-insulating coating. cuprofrio.plus is used for the transportation of technical gases and refrigerants.

cuprofrio.plus is very easy to unwind and to bend. This is possible because a heat-insulating coating is already applied during production.

The cuprofrio tube meets and exceeds the requirements of EN 12735-1 for copper tube for air conditioning and refrigeration. Wieland-Werke AG has concluded a separate warranty agreement with VDKF (Verband Deutscher Kälte-Klima-Fachbetriebe e.V. – Association of Refrigeration and Air Conditioning Contractors) covering property damage and bodily injury.

cuprofrio.plus meets the requirements of the Pressure Equipment Directive 2014/68/EU.

The coating consists of an elastomer-modified thermoplastic specially developed for air conditioning and refrigeration. The highly tear-resistant material proves its worth on building sites, for example when tubes are being fed through wall apertures.

Additional advantages of this material are low thermal conductivity and extremely high water vapour diffusion resistance, which, in combination with the insulating layer thickness, prevent the formation of condensation water on the tube surface. Together with modern refrigerants this ensures safe long-term operation.

The coating provides double UV protection resulting in a high level of colour fastness and stabilising material properties even in tube sections exposed to direct sunlight.

Energy losses are reduced by the factory-provided insulation. Furthermore, the insulation reduces the probability that humidity will condense on the tubes. Taking into account the air temperature and relative humidity, the following table shows the minimum media temperatures at which condensation does not occur on the insulation.

Air temperature	Tube dimension / relative humidity	6 x 1 mm	10 x 1 mm	12 x 1 mm	16 x 1 mm	18 x 1 mm	22 x 1 mm
25 °C	50 %	–37 °C	–29 °C	–27 °C	–23 °C	–22 °C	–20 °C
	60 %	–20 °C	–14 °C	–13 °C	–10 °C	–9 °C	–8 °C
	70 %	–6 °C	–2 °C	–1 °C	1 °C	1 °C	2 °C
30 °C	50 %	–36 °C	–27 °C	–25 °C	–21 °C	–20 °C	–18 °C
	60 %	–18 °C	–12 °C	–10 °C	–7 °C	–7 °C	–5 °C
	70 %	–3 °C	2 °C	3 °C	4 °C	5 °C	6 °C
35 °C	50 %	–34 °C	–26 °C	–23 °C	–19 °C	–18 °C	–16 °C
	60 %	–16 °C	–9 °C	–7 °C	–5 °C	–4 °C	–2 °C
	70 %	0 °C	5 °C	6 °C	8 °C	9 °C	10 °C
40 °C	50 %	–34 °C	–24 °C	–21 °C	–17 °C	–16 °C	–14 °C
	60 %	–14 °C	–7 °C	–5 °C	–2 °C	–1 °C	1 °C
	70 %	3 °C	8 °C	9 °C	11 °C	12 °C	13 °C

cuprofrio® plus

An outstanding characteristic of cuprofrio.plus is its bright, clean and dry inner surface. The tube ends are closed in order to keep the surface clean from storage and transportation through to installation.

- Material of core tube: Cu-DHP, Wieland-K20, R220 soft
- Tube design: EN 12735-1
- Pressure Equipment Directive: compliant
- Thermal insulation: elastomer-modified polyethylene HFC/CFC-free
- Operating temperature range: max. 105 °C
- Protective foil: UV-stabilised polyethylene
- Environmental declaration: according to ISO 14025
- Fire resistance: EN 13501-1-CL-s1-d0

cuprofrio.plus - Coils

- cuprofrio.plus standard dimension from stock (metric)

Tube	Dimension mm	Weight nominal kg/m	Operating pressure** bar	Insulating layer thickness mm	Coils m/coil
	6 x 1	0.140	194	9	25
	10 x 1	0.252	109	9	25
	12 x 1	0.308	89	9	25
	16 x 1	0.419	66	9	25
	18 x 1	0.475	57	9	25
	22 x 1	0.587	46	9	25

- cuprofrio.plus standard dimension from stock (inch)

Tube	Dimension mm	Weight nominal kg/m	Operating pressure** bar	Insulating layer thickness mm	Coils m/coil
	1/4" x 0.8	0.125	144	9	25
	3/8" x 0.8	0.197	92	9	25
	1/2" x 0.8	0.267	67	9	25
	5/8" x 1	0.417	67	9	25
	3/4" x 1	0.506	55	9	25
	7/8" x 1.2	0.707	57	9	25

** other dimensions are available on request*

*** calculated with 3.5 times safety coefficient on the basis of soft copper tubes with Rm 200 N/mm² at an operating temperature of von 100 °C*

****packing unit*

cuprofrio® plus

Pre-insulated refrigeration tube - twin version

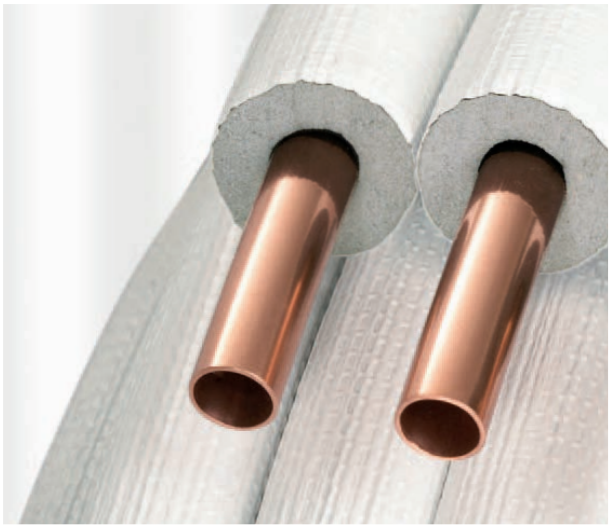
This tube consists of two seamless drawn Wieland cuprofrio refrigeration tubes with a heat-insulating coating. Cuprofrio.plus in twin version is mainly used for the transportation of technical gases and refriegrants. The special joint of the insulations of the cuprofrio.plus in twin version allows a simple and tool-free cutting and joining for a particularly efficient and aesthetic installation.

The cuprofrio.plus in twin version meets and exceeds the requirements of EN 12735-1 for copper tubes for air conditioning and refrigeration and also EN 378. Furthermore, the tubes meet the requirements of the Pressure Equipment Directive PED 2014/68/EU.

The highly tear-resistant material proves its worth on building sites, for example when tubes are being fed through wall apertures.

Additional advantages of this material are low thermal conductivity and extremely high water vapour diffusion resistance.

An outstanding characteristic of cuprofrio.plus in twin version is its bright, clean and dry inner surface. The tube ends are closed in order to keep the surface clean from storage and transportation through to installation.



Material of core tube:	Cu-DHP, Wieland K20, R220 soft
Tube design:	EN 12735-1
Pressure Equipment Directive:	compliant
Thermal insulation:	elastomer-modified polyethylene HFC/CFC-free
Thermal conductivity (10°C):	0.036 W/(m x K)
Operating temperature range:	max. 105°C
Protective foil:	UV-stabilised polyethylene
Environmental declaration:	according to ISO 14025
Fire resistance:	EN13501-1; C_L-s1-d0

cuprofrio.plus in twin version - Coils

cuprofrio.plus in twin version standard dimensions from stock* (metric)

Tube	Dimension mm	Dimension copper tube mm	Nominal weight kg/m	Insulating layer thickness mm	Coils m/coil
	6 – 10	6 x 1 – 10 x 1	0.392	9 – 9	25
	6 – 12	6 x 1 – 12 x 1	0.448	9 – 9	25
	6 – 16	6 x 1 – 16 x 1	0.559	9 – 9	25
	10 – 16	10 x 1 – 16 x 1	0.671	9 – 9	25
	10 – 18	10 x 1 – 18 x 1	0.727	9 – 9	25

cuprofrio.plus in twin version standard dimensions from stock* (inch)

Tube	Dimension mm	Dimension copper tube mm	Nominal weight kg/m	Insulating layer thickness mm	Coils m/coil
	1/4" x 3/8"	6.35 x 0.8 – 9.52 x 0.8	9 – 9	9 – 9	25
	1/4" x 1/2"	6.35 x 0.8 – 12.7 x 0.8	9 – 9	9 – 9	25
	1/4" x 5/8"	6.35 x 0.8 – 15.88 x 1	9 – 9	9 – 9	25
	3/8" x 5/8"	9.52 x 0.8 – 15.88 x 1	9 – 9	9 – 9	25
	3/8" x 3/4"	9.52 x 0.8 – 19.05 x 1	9 – 9	9 – 9	25

** other dimensions are available on request*

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